

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (currently amended): A portable radio device comprising:

a first casing;

a second casing;

at least two connection portions, each connection portion connecting the first casing to the second casing so as to freely rotate through a rotation shaft provided in each of the at least two connection portions;

a first antenna element, provided in the first casing;

a conductor element, provided in the second casing; and

at least two feeding portions provided in the second casing, each feeding portion having one end electrically connected to the first antenna element through each of the at least two connection portions including the rotation shaft and the other end electrically connected to the conductor element,

wherein the connection portion including the rotation shaft has electric conductivity to form a dipole antenna as a whole by the first antenna element, the connection portion and the conductor element,

wherein the connection portion is arranged away from the conductor element at a distance, and

wherein the feeding portions are separate from each other along the rotation shaft in a prescribed gap,

wherein the electrical connection between the first antenna element and the conductor element is switchable from one route of electrically connecting through one of the feeding ports and one of the connection portions to the other route of electrically connecting through the other of the feeding ports and the other of the connection portions to change a directivity of the dipole antenna.

Claim 2 (original): The portable radio device as set forth in claim 1, wherein a plurality of first antenna elements are provided in the first casing; and the portable radio device further comprising a switching portion which switches the plurality of first antenna elements so as to connect to the feeding portion.

Claim 3 (withdrawn): The portable radio device as set forth in claim 2, wherein the switching portion switches whether the plurality of the first antenna elements are electrically connected to the feeding portion or the plurality of the first antenna elements are electrically connected to the conductor element, respectively.

Claim 4 (previously presented): The portable radio device as set forth in claim 2, further comprising a half-wavelength element being

electrically connected between at least one of the plurality of the first antenna elements and the switching portion.

Claim 5 (withdrawn): The portable radio device as set forth in claim 2, further comprising a plurality of half-wavelength elements being respectively electrically connected to the plurality of the first antenna elements,

wherein the switching portion selectively switches the plurality of the first antenna elements and the plurality of the half-wavelength elements so as to connect to the feeding portion.

Claim 6 (withdrawn): The portable radio device as set forth in claim 1, further comprising a plurality of impedance matching portions respectively corresponding to the plurality of the first antenna elements.

Claim 7 (withdrawn): The portable radio device as set forth in claim 2, further comprising:

a casing opening and closing state detecting portion, detecting whether or not the first casing and the second casing are opened to each other; and

a control portion, controlling the switching portion in accordance with the detected result of the casing opening and closing state detecting portion.

Claim 8 (withdrawn): The portable radio device as set forth in claim 2, further comprising a control portion, determining a receiving level of a radio circuit portion to control the switching portion so as to raise the receiving level.

Claim 9 (original): The portable radio device as set forth in claim 1, wherein the antenna element and the conductor element are respectively formed in plate shapes along the surface of the first casing and the second casing.

Claim 10 (withdrawn): The portable radio device as set forth in claim 9, further comprising:

a circuit board, provided in the second casing and having a radio circuit,

wherein the conductor element is formed in a ground pattern which is formed on the circuit board provided in the second casing;

wherein a ground of the radio circuit portion is electrically connected to the ground pattern; and

wherein the feeding portion is provided in the radio circuit portion.

Claim 11 (withdrawn): A portable radio device as set forth in claim 1, further comprising:

a second antenna element, provided in the second casing near the connection portion;

an opening and closing state detecting portion, detecting the opening and closing states of the first casing and the second casing; and

a switching portion, selecting and switching any one of the first antenna element and the second antenna element to a connection to a signal processing portion for performing a signal process in accordance with the detected result of the casing opening and closing state detecting portion,

wherein when the first casing and the second casing are opened, the first antenna element and the conductor element form the dipole antenna; and

wherein when the first casing and the second casing are closed, the second antenna element and the conductor element form a mono-pole antenna.

Claim 12 (withdrawn): The portable radio device as set forth in claim 11, wherein when the first casing and the second casing are opened, the switching portion selects the first antenna element; and
wherein when the first casing and the second casing are closed, the switching portion selects the second antenna element.

Claim 13 (original): The portable radio device as set forth in claim 1, further comprising:

a second antenna element provided in the second casing near the connection portion;

a receiving field intensity measuring portion, measuring the receiving field intensity of a signal received by the first antenna element or the second antenna element; and

a switching portion, selecting and switching the antenna element having a higher receiving field intensity to a connection to a signal processing portion for performing a signal process in accordance with the measured result of the receiving field intensity measuring portion,

wherein the first antenna element has a first feeding point for electrically connecting to the conductor element;

wherein the second antenna element has second feeding point for electrically connecting to the conductor element; and

wherein the first feeding point and the second feeding point are provided at the diagonal positions of opposed sides when the first casing and the second casing are opened.

Claim 14 (withdrawn): The portable radio device as set forth in claim 11, further comprising:

a first matching portion, matching the impedance of the first antenna element to a prescribed value; and

a second matching portion, matching the impedance of the second antenna element to a prescribed value.

Claim 15 (withdrawn): The portable radio device as set forth in claim 1, further comprising:

a circuit board, provided in the second casing;

a plurality of feeding portions, feeding electric current to the antenna element and being separated to each other;

a radio circuit, disposed in the circuit board; and

a switching portion, provided between the plurality of feeding portions and the radio circuit and selecting any one of the plurality of the feeding portions to connect the radio circuit.

Claim 16 (withdrawn): The portable radio device as set forth in claim 1, further comprising:

a circuit board, provided in the second casing;

a radio circuit, disposed in the circuit board and electrically connected to the feeding portion;

a ground portion, spaced from the feeding portion and connecting the antenna element to the circuit board; and

a switching portion, switching whether the ground portion is connected to the circuit board or the ground portion and the circuit board are opened.

Claim 17 (withdrawn): The portable radio device as set forth in claim 16, wherein a plurality of ground portions are provided; and

wherein the ground portions are disposed so as to be spaced apart in the end part of the antenna element connected to the second casing.

Claim 18 (withdrawn): The portable radio device as set forth in claim 17, wherein the switching portion switches the ground portions respectively.

Claim 19 (withdrawn): The portable radio device as set forth in claim 16, wherein the connection portion has an electric conductivity; and

wherein the ground portion is electrically connected to the antenna element through the connection portion.

Claim 20 (canceled) :

Claim 21 (withdrawn) : The portable radio device as set forth in claim 15, further comprising:

a control circuit, controlling the switching portion in accordance with the level of a receiving signal received by the radio circuit.

Claim 22 (original) : The portable radio device as set forth in claim 1, wherein the first antenna element is an electric conductive frame forming a part of the first casing.

Claim 23 (previously presented) : The portable radio device according to claim 1,

wherein each of the at least two connection portions includes a first hinge portion provided in the first casing and a second hinge portion provided in the second casing,

wherein the first hinge portion is connected to an end of the first antenna element, and

wherein the second hinge portion is arranged away from the conductor element at the distance, and connected to each of the at least two feeding portions.

Claim 24 (previously presented) : The portable radio device according to claim 22, wherein the conductor element is a ground pattern provided on a circuit board.

Claim 25 (previously presented) : The portable radio device according to claim 23, wherein the connection portion is configured so that a capacity reactance occurs between the first hinge portion and the second hinge portion.

Claim 26 (previously presented) : The portable radio device according to claim 1, wherein each of the at least two connection portions is connected to each of the at least two feeding portions, respectively.

Claim 27 (previously presented) : The portable radio device according to claim 1, further comprising a switching portion provided in the second casing, and adapted to select any one of the at least two feeding portions to be electrically connected to a radio circuit disposed in the second casing.

Claim 28 (currently amended) : The portable radio device according to claim 1,

wherein each of the at least two connection portions includes a first hinge portion provided in the first casing and a second hinge portion provided in the second casing,

wherein the first casing and the first antenna element are mechanically fixed to each of the first hinge portions, and

wherein the second casing, each of the second hinge portions and each of the at least two feeding portions are respectively mechanically fixed.